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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,070	04/16/2004	Gordon E. Letney	7784-000730	9979
27572	7590	01/24/2008		
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			EXAMINER SCHEIBEL, ROBERT C	
			ART UNIT	PAPER NUMBER
			2619	
			MAIL DATE	DELIVERY MODE
			01/24/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/826,070	Applicant(s) LETNEY ET AL.	
	Examiner Robert C. Scheibel	Art Unit 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims **2, 8-11, 13-24, and 26-35** objected to because of the following informalities:

- In line 1 of each of these claims, “comprising” should be replaced with “further comprising”.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims **8 and 12-35** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim **8** recites the limitation "the Internet Service Provider" in line 3. There is insufficient antecedent basis for this limitation in the claim. Claim 7 includes at least one Internet Service Provider; it is unclear to which of these the above mentioned phrase refers.

5. Claims **12 and 25** recite the limitation "the communications link manager" in line 6. There is insufficient antecedent basis for this limitation in the claim. The preamble of each claim recites at least one ground based communications link manager; it is unclear to which of these the above mentioned phrase refers. Claim 29 also includes the limitation “the communications link manager” in line 3 and is similarly rejected.

6. Claims **13-24 and 26-35** depend from claims 12 and 25, respectively, and are thus indefinite for the reasons stated above.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims **1, 2, 4-9, 11-15, and 17-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 2005/0169220 to Sreemanthula et al in view of U.S. Patent Application Publication 2003/0182445 to Smith et al.

Regarding claim **1**, Sreemanthula discloses a routing system operable to link a mobile platform (MR3 of the mobile network MONET 1 of Figure 2) to the Internet (element 2 of Figure 2), comprising:

a ground based communications link manager communicatively linkable to the mobile platform (AR-1 5 of Figure 2);

an initial destination address assignable to the mobile platform (the care-of-address CoA described in paragraph 11 on page 1, for example);

and a prefix server program operable to communicate the initial destination address of the mobile platform to the communications link manager and to the Internet (this functionality is described in paragraph 11 on page 1 which indicates how the CoA is communicated via a binding update (BU) to the HA_MR 8 which is connected to the Internet).

Although Sreemanthula discloses the assignment of prefixes to the MR, Sreemanthula does not disclose expressly that this is performed by a prefix server. Specifically, Sreemanthula does not disclose expressly at least one ground based prefix server in operable communication with the communications link manager.

However, Smith discloses at least one ground based prefix server in operable communication with the communications link manager (prefix server 14 of Figure 4, for example).

Sreemanthula and Smith are analogous art because they are from the same field of endeavor of network mobility in the Internet. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Sreemanthula to add the prefix server of Smith. The motivation for doing so would have been to allow efficient and automatic assignment of prefixes to routers from a group of available prefixes as suggested by Smith in paragraph 3 on page 1. Therefore, it would have been obvious to combine Smith with

Sreemanthula for the benefit of efficient and automatic prefix allocation to obtain the invention as specified in claim 1.

Regarding claim 7, Sreemanthula disclose a method for operating a mobile platform communications system prefix server, comprising:

linking the prefix number to a mobile platform destination address (see paragraph 11 on page 1 which describes how the CoA is reconfigured based on the prefix and thus linked to the prefix);

and signaling to at least one Internet service provider the location of the mobile platform destination address (the BU sent to the HA_MR as described in paragraph 11 on page 1; the HA links the MR to the internet and thus provides internet service).

Sreemanthula does not disclose expressly the selecting or the first linking steps of claim 7. However, Smith discloses selecting a prefix number from a plurality of prefix numbers (see paragraph 14 on page 1) and linking the prefix number to a mobile platform identification number (the contact address in table 2 on page 4).

Sreemanthula and Smith are analogous art because they are from the same field of endeavor of network mobility in the Internet. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Sreemanthula to add the prefix server of Smith. The motivation for doing so would have been to allow efficient and automatic assignment of prefixes to routers from a group of available prefixes as suggested by Smith in paragraph 3 on page 1. Therefore, it would have been obvious to combine Smith with

Sreemanthula for the benefit of efficient and automatic prefix allocation to obtain the invention as specified in claim 7.

Regarding claim 12, Sreemanthula discloses a method for maintaining communications contact between a mobile platform (MR3 of the mobile network MONET 1 of Figure 2) and the Internet during a travel segment of the mobile platform using at least one ground based communications link manager (AR-1 5 of Figure 2), the method comprising:

and signaling via a prefix server a destination address of the mobile platform using the prefix number communicated via the communications link manager (see paragraph 11 on page 1 which indicates how the destination address (CoA) is communicated to the HA_MR when the MR 3 travels to a new AR (AR-2)).

However, Sreemanthula does not disclose expressly the creating, programming, and assigning steps. However, Smith discloses creating at least one ground based prefix server operable to communicatively link the mobile platform and the communications link manager (prefix server 14 which provides the prefix used by the mobile platform (MR) to communicate with the communications link manager (AR));

programming the prefix server to operatively select a prefix number for the mobile platform from a plurality of prefix numbers (see paragraph 14 on page 1);

assigning the prefix number to the mobile platform for the travel segment (again, see paragraph 14 on page 1 which indicates that the selected prefix is assigned to the router).

Sreemanthula and Smith are analogous art because they are from the same field of endeavor of network mobility in the Internet. At the time of the invention, it would have been

obvious to a person of ordinary skill in the art to modify Sreemanthula to add the prefix server of Smith. The motivation for doing so would have been to allow efficient and automatic assignment of prefixes to routers from a group of available prefixes as suggested by Smith in paragraph 3 on page 1. Therefore, it would have been obvious to combine Smith with Sreemanthula for the benefit of efficient and automatic prefix allocation to obtain the invention as specified in claim 12.

Regarding claim 2, Sreemanthula discloses the limitation that the initial destination address of the mobile platform is assignable from the prefix number (see paragraph 11 on page 1). However, Sreemanthula does not disclose expressly the limitation of a prefix number selectable from a plurality of prefix numbers. However, Smith discloses a prefix number selectable from a plurality of prefix numbers (see paragraph 14 on page 1). Sreemanthula and Smith are analogous art because they are from the same field of endeavor of network mobility in the Internet. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Sreemanthula to add the prefix server of Smith. The motivation for doing so would have been to allow efficient and automatic assignment of prefixes to routers from a group of available prefixes as suggested by Smith in paragraph 3 on page 1. Therefore, it would have been obvious to combine Smith with Sreemanthula for the benefit of efficient and automatic prefix allocation to obtain the invention as specified in claim 2.

Regarding claim 4, Sreemanthula discloses the limitation that the prefix server and the ground based communications manager are in operable communication with the Internet using at least one of a plurality of Internet service providers (element 2 of Figure 2 is the Internet; thus

the prefix server and the communications manager are in communication with the Internet which is clearly provided by at least one Internet service provider).

Regarding claim 5, Sreemanthula discloses the limitation that a new destination address is communicable to the Internet using the prefix server during a travel segment of the mobile platform (see paragraph 11 on page 1 which indicates that when the MR travels to a new access point, a new destination address is determined using the new prefix).

Regarding claim 6, Sreemanthula discloses the limitation that the new destination address is operatively communicable to the Internet using a second communications link manager (see Figure 2; the AR-2 is the second communications link manager).

Regarding claim 8, Sreemanthula discloses the limitations of adding data transfer routes between the mobile platform destination address and the Internet service provider (the binding update updates the HA so that the mobile nodes connected to the MR are routed data correctly via the routes from the HA to the MR as described in paragraph 10 on page 1); confirming if a two-way communications path is open between a mobile platform and a ground communications link manager (in Figure 2 and in paragraphs 10 and 11 on page 1, the MR is aware of whether the communication link with the AR-1 exists); and withdrawing the data transfer routes when the two-way communications path is broken (in paragraph 11 on page 1, when the communication link with the AR-2 is opened and (the link with the AR-1 is closed), the binding updates are sent to indicate that the routes to AR-1 are to be withdrawn (changed to AR-2)).

Regarding claim **9**, Sreemanthula discloses the limitation that the prefix server is positioned as a ground based unit in that the AR-1 and AR-2 are ground based units and the prefix server in the combination is connected by a cable to these devices.

Regarding claim **11**, Sreemanthula discloses the limitation of notifying a plurality of route servers of the prefix number in the binding updates described in paragraph 11 on page 1.

Regarding claim **13**, Sreemanthula disclose the limitations of selecting a new prefix number upon initiation of a new travel segment of the mobile platform (see paragraph 11 on page 1 which indicates that a new prefix is used when the MR moves to AR-2); creating a new destination address using the prefix server (the new CoA is created based on the new prefix; see paragraph 11); and signaling the new destination address using the prefix server during the new travel segment of the mobile platform to operatively maintain communication between the mobile platform and the Internet (the binding updates described in paragraph 11).

Regarding claim **14**, Sreemanthula discloses the limitations of establishing a two-way communication path between the mobile platform and the communications link manager (changing attachment points to AR-2); and adding a plurality of route paths using the prefix server after the two-way communication is established (the binding updates of paragraph 11).

Regarding claim **15**, Sreemanthula discloses the limitation of withdrawing the route paths when the two-way communication ends in paragraph 11 which indicates that the old routes (to AR-1) are changed to the new routes (to AR-2) via the binding updates when the two-way communication to AR-1 ends.

Regarding claim **17**, Sreemanthula discloses the limitation of injecting a plurality of network layer reachability information using the prefix server in the binding updates of paragraph 11.

Regarding claim **18**, Sreemanthula discloses the limitation of notifying a plurality of Internet route servers of the selected prefix number using the prefix server in the binding updates of paragraph 11.

Regarding claim **19**, Sreemanthula discloses the limitation of parent claim 12 as described above. Sreemanthula does not disclose expressly the limitation of initially allocating the plurality of prefix numbers to a global pool of prefix numbers. However, Smith discloses initially allocating the plurality of prefix numbers to a global pool of prefix numbers (the available prefix numbers is a global pool of prefix numbers). Sreemanthula and Smith are analogous art because they are from the same field of endeavor of network mobility in the Internet. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Sreemanthula to add the prefix server of Smith. The motivation for doing so would have been to allow efficient and automatic assignment of prefixes to routers from a group of available prefixes as suggested by Smith in paragraph 3 on page 1. Therefore, it would have been obvious to combine Smith with Sreemanthula for the benefit of efficient and automatic prefix allocation to obtain the invention as specified in claim 19.

10. Claims **3, 10, and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 2005/0169220 to Sreemanthula et al in view of U.S. Patent

Application Publication 2003/0182445 to Smith et al in further view of U.S. Patent Application Publication 2003/0048786 to D'Annunzio.

Regarding claims **3 and 10**, the combination of Sreemanthula and Smith discloses all limitations of parent claims 1 and 7 as discussed above. However, the combination of Sreemanthula and Smith does not disclose expressly the limitation of using the well known border gateway protocol. However, D'Annunzio discloses using the border gateway protocol to maintain routing information between the routers (see paragraph 22 on page 2). D'Annunzio and Sreemanthula are analogous art as they are from the same field of endeavor of mobile networks. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the above combination to use the BGP protocol in the MRs. The motivation would have been to allow the MRs to exchange route information with routers in different autonomous systems to allow proper routing of packet to the mobile nodes in the network. Therefore, it would have been obvious to combine D'Annunzio with the combination of Sreemanthula and Smith for the benefit of updating routing information to obtain the invention as specified in claims 3 and 10.

Regarding claim **16**, the combination of Sreemanthula and Smith discloses all limitations of parent claim 12 as discussed above. However, the combination of Sreemanthula and Smith does not disclose expressly the limitation of mapping a unique aircraft identification number to the assigned prefix number using the prefix server. D'Annunzio discloses the limitation of mapping a unique aircraft identification number to the assigned prefix number using the prefix server in the mapping of the aircraft tail number to the prefix as indicated in throughout (see the abstract for example). D'Annunzio and Sreemanthula are analogous art as they are from the

same field of endeavor of mobile networks. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the above combination to use the aircraft tail number to map the prefix number of the MR in the situation where the MR is on an aircraft. The motivation for doing so would have been to simplify the routing as suggested by D'Annunzio in paragraph 7 on page 1. Therefore, it would have been obvious to combine D'Annunzio with the combination of Sreemanthula and Smith for the benefit of simplifying the routing to obtain the invention as specified in claim 16.

Allowable Subject Matter

11. Claims **20-24** would be allowable if rewritten to overcome the rejections under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

12. Claims **25-35** would be allowable if rewritten or amended to overcome the rejections under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

13. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 20, the prior art of record discloses all limitations of parent claim 19. However, the prior art of record does not disclose the limitation of creating a local pool operable to contain a first portion of the plurality of prefix numbers and assigning the local pool to an autonomous system in operable communication with the Internet in combination with all limitations of the parent claims. Claims 21-24 are indicated as allowable as they depend from claim 20.

Regarding claim 25, the prior art of record does not disclose the combination of creating at least one ground based prefix server operable to communicatively link the mobile platform and the communications link manager; submitting a mobile platform request for the prefix number at the initiation of the travel segment; assigning the prefix number to a mobile platform identification number; and operating the prefix server to signal a destination address of the mobile platform using the prefix number communicated via the communications link manager in combination with all other limitations of this claim. Claims 26-35 are allowable as they depend from claim 25.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- U.S. Patent Application Publication 2006/0050628 to Ng et al discloses a mobile network control device.
- U.S. Patent Application Publication 2005/0099971 to Droms et al discloses an arrangement in an access router for optimizing mobile router connections based on delegated network prefixes.
- U.S. Patent Application Publication 2004/0032852 to Thubert et al discloses an arrangement for router attachments between roaming mobile routers in a mobile network.
- U.S. Patent Application Publication 2006/0080460 to Kobayashi et al discloses a mobile router device.

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- U.S. Patent Application Publication 2004/0010615 to Ernst et al discloses a system for mobile networks.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert C. Scheibel whose telephone number is 571-272-3169. The examiner can normally be reached on Mon and Thurs (6:30-5:00) and Fri (6:30-12:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing F. Chan can be reached on 571-272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RCS 1/22/2008
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